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THE BOR-HAD APPLICATION: A CONCEPTUAL INNOVATION IN ISLAMIC EDUCATION WITH UMI PRINCIPLES

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Abstract:

The rapid expansion of digital integration across the global educational sector, which was profoundly catalysed by the recent COVID-19 health crisis, highlights a critical demand for pioneering and ethics-centred technological advancements, especially in Islamic academic environments. This study presents a conceptual exploration of Bor-Had, a proposed digital architecture for student attendance management. Beyond merely streamlining administrative accuracy and institutional communication, Bor-Had is engineered to embody the foundational governance pillars of Kelantan: 'Ubudiyyah (devotion), *Mas'uliyyah* (accountability), and *Itqan* (excellence). By utilizing a conceptual framework analysis, this research evaluated how the intended functionalities of Bor-Had align with these UMI principles to validate its necessity as a value-based innovation. The investigation indicates that the system's automated features and live data analytics are specifically crafted to support 'Ubudiyyah by reclaiming time for essential educational and religious activities. Additionally, the system's commitment to transparent and reliable data logs is expected to strengthen *Mas'uliyyah*. At the same time, Bor-Had's focus on technical exactness, and the removal of operational flaws is positioned to advance *Itqan*. As a major development in the digitalization of Islamic learning, this conceptual model provides a standard for 'Sharia-Compliant by

Design technology. These innovations ensure that software architectures not only harmonize with but actively reinforce Islamic moral values. The study highlights Bor-Had's capacity to build more robust and flexible Islamic academic systems, guaranteeing that technical upgrades are in direct service to spiritual goals. Finally, the paper outlines significant implications and prospective research paths for the moral and efficient adoption of value-integrated technology.

Introduction

The rapid expansion of global digital integration, accelerated by the COVID-19 pandemic, has created a critical demand for ethics-centered systems within Islamic education. While this shift has necessitated the integration of digital tools into nearly every facet of academic instruction and institutional management (Zulfiati et al., 2021), it also presents a distinct challenge for Islamic academic organizations. Specifically, there is an urgent need for creative technical solutions that improve operational productivity while remaining deeply rooted in fundamental Islamic moral and ethical standards. Although many current digital platforms prioritize functional utility alone, there remains a notable void in the creation of systems that are '*Sharia*-Compliant by Design', a model which ensures that technical progress actively supports elevated spiritual goals.

In this context, traditional, non-automated systems for tracking student presence represent a clear opportunity for digital modernization. Currently, manual methods frequently suffer from mistakes, operational lag, data displacement, and challenges in compiling records (Gustiar et al., 2022; Yuliadi et al., 2022). Furthermore, these technical weaknesses tend to waste the limited time of both teachers and staff, ultimately pulling their attention away from essential instructional duties and spiritual guidance. To address these challenges, this study provides a conceptual design and governance analysis of Bor-Had (an abbreviation for '*Borang Kehadiran*'), a proposed student attendance management system (SAMS). It is important to clarify that Bor-Had is presented here as a theoretical innovation and has not yet been implemented in a live environment.

Bor-Had is conceptualized as a tool designed to balance administrative optimization with a steadfast adherence to Islamic values. Consequently, the architecture of Bor-Had is built to align with the core moral governance pillars of Kelantan, which are *'Ubudiyyah* (devotion), *Mas'uliyyah* (accountability), and *Itqan* (excellence), or collectively known as the UMI

framework. The objective of this research is to validate the theoretical logic and importance of Bor-Had by investigating how its intended capabilities and design serve to uphold these UMI principles.

The organization of this paper follows a systematic sequence, starting with a Literature Review that analyzes current attendance software and the UMI ethical concepts. This is followed by a Methodology section, which describes the application of the ADDIE framework as a guide for the system's creation. Subsequently, the primary analysis is found in the section on the conceptualisation of Bor-Had and UMI principles, which maps the system's technical layout to the moral framework. To conclude, the paper provides a Discussion and Recommendation segment that assesses the impact of Bor-Had and identifies vital future phases for its practical realization and scholarly inquiry.

Literature Review

The theoretical framework in this conceptual study concentrates on two separate yet interconnected domains: the implementation and effectiveness of digital student monitoring systems, and the application of UMI principles within organizational settings.

Digital Student Attendance Systems

The administrative hurdles associated with manual roll-calling are extensively analyzed in academic research, particularly regarding time loss, data errors, and the potential for record tampering. The momentum toward digital automation aims to mitigate these risks, especially as educational reliance on virtual platforms grew during the pandemic (Zulfiati et al., 2021). Consequently, modern frameworks utilize a range of tools, from internet-based applications to high tech authentication methods.

Web-centric systems frequently employ PHP/MySQL architectures for digital data management, which effectively addresses the issues of physical record destruction and complex data synthesis (Gustiar et al., 2022; Yuliadi et al., 2022). These platforms often integrate QR code scanners for rapid and authenticated student check-ins, significantly boosting operational speed (Liew & Tan, 2021).

Beyond simple scanning, advanced recognition technologies are utilized to bolster security and precision. This includes biometric tools like fingerprint scanners, which automatically compile records and can even dispatch SMS updates to guardians (Abbas et al., 2024; Bahri et al., 2020). Furthermore, facial recognition represents the current peak of automation, providing the accuracy needed to remove human error from tracking process (Sunaryono et al., 2021; Susanti et al., 2023). Academic consensus suggests these automated frameworks essential for improving the precision and openness of student supervision (Nurfaizi & Hindarto, 2023).

UMI Ethical Principles in Islamic Governance

The theoretical foundation of the Bor-Had system is built upon the UMI framework: *'Ubudiyyah*, *Mas'uliyyah*, and *Itqan*. These principles serve as the philosophical basis for development in Kelantan and represent the heart of the state's Islamic administrative philosophy, '*Membangun Bersama Islam*' (Developing with Islam) (Kamaruzaman et al., 2022).

- *'Ubudiyyah* (Devotion) dictates that all human activity should be viewed as a form of service to Allah SWT. In a functional sense, this principle promotes the allocation of time to meaningful and spiritual work while avoiding tasks that deplete resources without providing value.
- *Mas'uliyyah* (Responsibility) involves a profound sense of integrity and responsibility. Any profesional obligation must be handled as a trust (*amanah*) before Allah SWT. This particularly vital for administrative workflows, where it mandates transparency and truthfulness in data handling and resource oversight.
- *Itqan* (excellence) focuses on mastery and superior quality in all professional efforts. It requires exactness, the removal mistakes, and a constant drive toward professional perfection. This principle necessitates the creation of reliable systems that ensure administrative outputs, such as attendance logs, are of the highest standard.

Methodology

This research utilizes Conceptual Framework Analysis as its primary methodological approach, concentrating on the initial Analysis and Design steps of the globally recognized ADDIE framework. As the Bor-Had system is currently a proposed innovation, this theoretical stage is vital for validating its ethical and philosophical underpinnings prior to the start of technical software engineering.

Research Design

The study adopts a qualitative and conceptual research design. This entails an extensive evaluation of scholarly works to justify the requirement for automated tracking and to clarify the moral parameters of the UMI framework. This review confirmed the appropriateness of the ADDIE model for creating educational tools. Furthermore, a Comparative Mapping process was conducted to ensure a consistent alignment between Bor-Had's intended technical capabilities and the UMI ethical model.

Instructional Design and the ADDIE Model

The effective creation of educational technology usually depends on a methodical instructional design system. The ADDIE framework (comprising Analysis, Design, Development, Implementation, and Evaluation) is globally established, structured model for producing educational content, multimedia, and technical systems (Hidayat & Nizar, 2021; Safitri & Aziz, 2022; Spatioti et al., 2022). Furthermore, its sequential nature ensures that development remains organized and subject to strict verification (Weldami &Yogica, 2023). This model has been successfully applied to various developments, including e-learning environments (Zulfiati et al., 2021) and web portals (Salas-Rueda et al., 2020). For the proposed Bor-Had system, ADDIE provides the essential structure to ensure the engineering process is both systematic and ethically validated, positioning Bor-Had as a robust conceptual model.

The ADDIE Model as a Roadmap

The ADDIE framework was selected for its organized and logical structure, which naturally reflects the principle of *Itqan* (Hidayat & Nizar, 2021). The current development of Bor-Had is focused on the first two stages:

- Analysis Phase that involves diagnosing the core issue, which is the lack of productivity in manual attendance methods and the absence of religious value integration in existing software. By examining existing literature, user requirements for speed, precision, and openness were identified, establishing the design objective of creating a system that bolsters UMI values (Gustiar et al., 2022).
- Design Phase is when the theoretical structure of the application is outlined. This includes specifying Bor-Had's functionalities – such as live data analytics and automatic identification – intentionally correlating each function with a UMI principle. This theoretical mapping represents the primary intellectual contribution of this research.

Future Research Phases

The remaining three components of the ADDIE framework represent the upcoming empirical stages required for the complete deployment of Bor-Had:

- Development that involves the physical creation of the software, including the programming of the app, the organization of databases, and the engineering of the user interface.
- Implementation entails deploying the system for a trial period at an Islamic learning institution in Kelantan, accompanied by training for administrative staff, educators, and students.
- Evaluation is the final step involves comprehensive testing to assess the platform's validity, usability, and overall performance (Gustiar et al., 2022; Panji, 2022). This stage is essential for gathering empirical evidence regarding both technical reliability and the application's effectiveness in advancing UMI ethics within an academic setting.

Conceptual Framework Analysis: The Comparative Mapping Process

To validate the ethical and philosophical underpinnings of the proposed system, this study employs a Comparative Mapping process as a core analytical tool. This process entails a systematic alignment where the intended technical functionalities of Bor-Had are mapped directly against the specific moral parameters of the UMI framework. Rather than performing a general comparison, this mapping functions as a governance analysis to ensure that every architectural decision, such as the choice of identification technology or data processing methods, serves to uphold the principles of *'Ubudiyyah, Mas'uliyyah,* and *Itqan*.

Procedurally, this mapping was conducted in three distinct stages: first, identifying the primary technical requirements of a Student Attendance Management Systems (SAMS) based on current technological standards (Gustiar et al., 2022); second, deconstructing the UMI principles into actionable organizational indicators; and third, cross-referencing these elements to identify functional synergies. By utilizing this methodical approach, the research positions Bor-Had as a '*Sharia*-Compliant by Design' prototype, where technical progress is not merely about administrative efficiency but is intentionally engineered to support spiritual goals. This mapping process acts as a verification stage within the Design phase of the ADDIE model (Hidayat & Nizar, 2021), ensuring that the final system architecture is both technically precise and value aligned. Consequently, this approach suggests the potential to create a transparent blueprint for developing resilient Islamic education systems that remain anchored in religious standards.

Conceptualization of Bor-Had and UMI Principles

The core contribution of this research lies in the purposeful architecture of Bor-Had, which is proposed as a digital medium for advancing the UMI ethical model. The theoretical connection is established by characterizing each UMI principles and correlating it with specific functionalities of the Bor-Had platform. The interplay between the primary technical components of Bor-Had and the targeted moral objective is visualized in Figure 1.
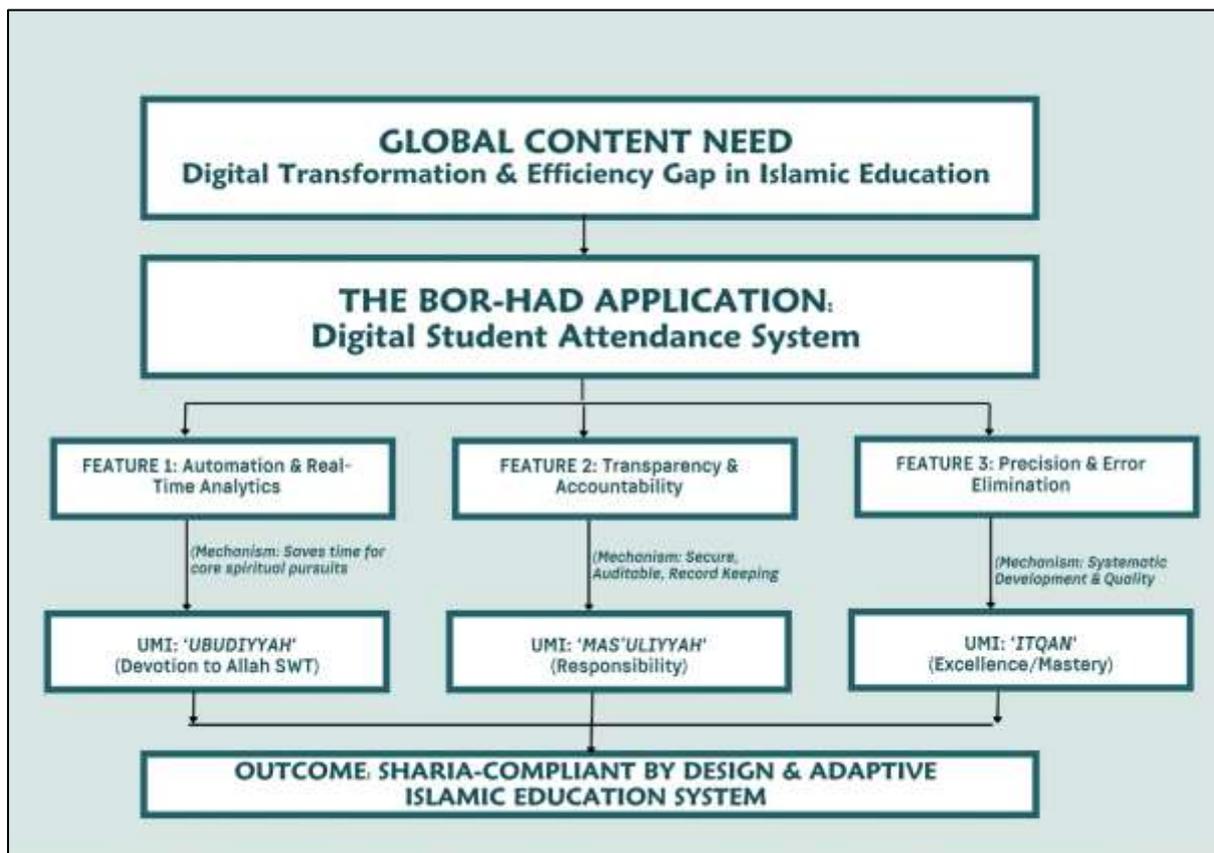

Figure 1: Interaction between the Core Technical Attributes of Bor-Had & the Intended Ethical Outcomes
Source: (Gustiar et al, 2022; Nurfaizi & Hindarto, 2023; Sunaryono et al., 2021; Abbas et al., 2024; Susanti et al., 2023; Firdaus et al., 2022; Panji, 2022; Kamaruzaman et al., 2022)

In addition, the interaction between the technical features of the Bor-Had Student Attendance Management Systems and its conceptual significance in promoting the UMI ethical principles is detailed in Table 1.

Table 1: Significance of Bor-Had Student Attendance Management Systems (SAMS) Feature that Interacts to UMI Principle

UMI Principle	Definition	Key Findings/ Focus
'Ubudiyyah	Devotion to Allah SWT; the essence that man is the vicegerent of Allah SWT in this world.	Liberation of Time for Spiritual/ Core Duties: • By automating the time-consuming and tedious manual attendance process, valuable time is redeemed for educators and student to focus on core pedagogical, intellectual, and spiritual pursuits, thus fulfilling devotion.
Mas'uliyyah	Responsibility and accountability; a job is a responsibility and must be fulfilled as a duty toward Allah SWT.	Enhancing Accountability and Integrity: • The system's use of real-time, tamper-proof digital records and high-security identification methods like biometrics or QR codes ensures robust transparency, eliminating fraud and strengthening the sense of responsibility.
Itqan	Excellence, mastery, and quality in work.	Achieving Operational Excellence and Precision: • The design emphasis on automation, precision, and error elimination ensures the administration process is executed with the highest quality. • Using R&D models like ADDIE further guarantees the system's structural quality.

Source: (Gustiar et al, 2022; Nurfaizi & Hindarto, 2023; Sunaryono et al., 2021; Abbas et al., 2024; Susanti et al., 2023; Firdaus et al., 2022; Panji, 2022)

Defining the UMI Framework

The UMI principles serve as the moral guide for institutional development and administrative governance within Kelantan.

1. *'Ubudiyyah* or the devotion to the Creator maintains that all human endeavours and the allocation of time should fundamentally function as acts of worship. Within an academic environment, this translates to the reduction of tedious, non-essential administrative burdens to prioritize high-value educational and spiritual growth.

2. *Mas'uliyyah* or accountability highlights that every professional obligation is a sacred trust (*amanah*) that must be executed with total integrity. It necessitates openness,

truthfulness, and auditable data management to ensure all participants remain answerable for their duties.

3. *Itqan* or excellence mandates exactness and the highest standards of quality across all professional activities. At its core, it is about achieving operational perfection and the systematic removal of technical or human flaws (Kamaruzaman et al., 2022).

Correlating Bor-Had Capabilities with UMI Principles

Bor-Had and 'Ubudiyyah (Devotion)

The architecture of Bor-Had is designed to optimize time management, thereby allowing for the redirection of efforts toward essential intellectual and spiritual mentoring.

- Feature 1: Automated Data Collection (QR & Facial Recognition) – By implementing rapid identification tools (Sunaryono et al., 2021), Borhad removes the time-consuming nature of manual registers. The cumulative time saved across the institution allows for a greater focus on teaching and devotional activities, fulfilling the goal of *'Ubudiyyah*.
- Feature 2: Instant Reporting and Data Synthesis – The application capacity for immediate data processing eliminates the need for the manual entry and summarization tasks common in legacy systems (Gustiar et al., 2022; Firdaus et al., 2022). This streamlines the workload for staff, ensuring that the primary mission of the institution remains spiritual and academic development.

Bor-Had and Mas'uliyyah (Responsibility)

To strengthen *Mas'uliyyah*, Bor-Had focuses on generating secure and unalterable attendance logs, which fosters an environment of truthfulness and institutional accountability.

- Feature 3: Advanced Security and Fraud Prevention – The system utilizes biometric verification or location-stamped logs (Liew & Tan, 2021) to prevent the 'proxy attendance' issues found in manual records. By ensuring data is auditable, the system links physical presence to personal integrity.
- Feature 4: Transparent Stakeholder Access and Notifications – Bor-Had provides live data access for administrators, educators, and guardians (Bakhri et al., 2020). Automated alerts regarding student absences (Abbas et al., 2024) ensure that responsibility is communicated immediately, encouraging collective oversight of student attendance.

Bor-Had and Itqan (Excellence)

To advance the principle of *Itqan*, the platform emphasizes technical exactness, methodical engineering, and superior operational performance.

- Feature 5: Methodical R&D through the ADDIE framework – The theoretical design of Bor-Had adheres to the structured phases of the ADDIE model. This validated approach is an expression of *Itqan*, ensuring the final output is bot dependable and compliant with top-tier quality standards (Spatioti et al., 2022).
- Feature 6: Precision-Driven Digital Architectures – By adopting identification technologies with verified high-accuracy rates, such as facial recognition (Sunaryono et al., 2021), the system protects data reliability. This drive for absolute precision is the practical manifestation of *Itqan* within educational administration.

Discussion

The conceptual analysis of the envisioned Bor-Had application confirms its importance as a standard for ethics-centred technical advancement in Islamic institutions. Given the rising necessity for digital productivity in modern academia – a demand significantly heightened by recent global disruptions – it is essential that technology does more than solve logistical hurdles; it must also uphold fundamental moral principles (Zulfiati et al., 2021). By providing an automated, live solution, the system suggests potential to mitigate prevalent manual tracking issues such as data errors, heavy administrative workloads, and the potential for attendance fraud (Gustiar et al., 2022).

However, the true value of Bor-Had is found in its purposeful embedding of the Kelantan moral framework: *'Ubudiyyah, Mas'uliyyah* and *Itqan*. This theoretical approach moves beyond simple technical adoption to offer a '*Sharia*-Compliant by Design' prototype, where software functionalities actively advance spiritual and ethical goals.

Firstly, the system's focus in Automation and Real-Time Analytics serves the principle of '*Ubudiyyah*'. By freeing up administrative time, Bor-Had allows educators and staff to allocated valuable resources toward core spiritual and pedagogical duties. This aligns administrative improvements directly with the higher objective of devotion to Allah SWT, ensuring that technological progress supports, rather than distracts from, the religious mission of the institution (Firdaus et al., 2022).

Secondly, the emphasis on Robust Transparency and Accountability reinforces '*Mas'uliyyah*'. Previous research shows that technology-based attendance systems, such as those employing biometric or SMS alerts, enhance monitoring and communication with stakeholders like parents (Abbas et al., 2024; Bakhri et al., 2020). Bor-Had's transparent record-keeping positions the system as a tool for cultivating integrity by minimizing opportunities for fraud and ensuring that every stakeholder is fully accountable for their presence or absence, fostering the sense of duty prescribed by this principle.

Finally, the commitment to Precision and Error Elimination promotes '*Itqan*'. The use of systematic development models like ADDIE and high-accuracy identification methods (Sunaryono et al., 2021) ensures that the system operates with excellence, a fundamental requirement of '*Itqan*' (Kamaruzaman et al., 2022). By delivering reliable and accurate data, the system establishes a high standard of quality in institutional management, which in turn supports a resilient and trustworthy, educational environment.

Recommendations

Based on this conceptual analysis, the following recommendations are put forth to guide the future research and development of the Bor-Had application and the wider field of value-driven educational technology:

1. Full System Development and Validation: The conceptual framework must now be translated into a tangible product. It is recommended that the full cyclical stages of the ADDIE Model – specifically the Development, Implementation and Evaluation phases – be immediately pursued. This must include rigorous technical testing, followed by user acceptance trials to measure the system's validity and practicality in a real-world setting (Panji, 2022; Gustiar et al., 2022).

2. Empirical Measurement of UMI Impact: Future empirical research should be designed to quantitatively and qualitatively measure the impact of Bor-Had's implementation on the UMI principles. This includes measuring the time-saved by educators (linking to 'Ubudiyyah'), the reduction in attendance manipulation ('Mas'uliyyah') and user satisfaction with the system's reliability ('Itqan').

3. Generalization of the UMI-by-Design Model: It is recommended that researchers investigate the generalization of this 'Sharia-Compliant by Design' framework. The UMI conceptual integration could be applied to other administrative or pedagogical technologies within Islamic educational institutions, such as grading management, curriculum development or digital learning content (Spatioti et al., 2022), thereby broadening the scope of ethical technology integration in the sector.

Conclusion

The conceptual analysis presented in this article establishes the Bor-Had application as a pivotal and value-driven innovation for the digital transformation of Islamic education. Recognizing the dual pressures of global technological acceleration and the need to preserve core religious and ethical principles, Bor-Had offers a solution that transcends mere administrative efficiency. By systematically integrating the features of a modern student attendance management system, namely automation, real-time analytics and robust accountability, with Kelantan's foundational ethical pillars of '*Ubudiyyah*' (devotion), '*Mas'uliyyah*' (responsibility) and '*Itqan*' (excellence), Bor-Had is proposed as a genuinely '*Sharia*-Compliant by Design' technology.

In conclusion, the Bor-Had conceptual innovation serves as a practical blueprint, offering a tangible model for developing resilient and adaptive Islamic education systems. Its significance lies in demonstrating that administrative improvements can and should be intentionally aligned to serve higher spiritual and moral objectives. Therefore, this model suggests potential to set a new precedent for the ethical and effective integration of technology within faith-based educational contexts.

Ethics Statement:	This study was conducted in accordance with ethical research standards. All procedures involving human participants were reviewed and approved by the Jawatankuasa Penyelidikan dan Penerbitan KIAS (JPPK), approval number [KRGS/40312/KRG25/045]. Informed consent was obtained from all participants prior to data collection. Participation was voluntary, and respondents were assured of confidentiality and anonymity. The data collected were used solely for academic purposes.
Author Contribution Statement:	All authors contributed significantly to the development of this manuscript. Dr. Tuan Siti Mastazameatun Long Tuan Kechik was responsible for the conceptualization, methodology, and overall supervision of the study. Dr. Nur Azwani Mansor@Noordin and Nur Alya Fatihah Yusri handled data collection, analysis, and interpretation of results. Faizul Aziz Kamil contributed to the literature review, drafting, and critical revision of the manuscript. All authors read and approved the final version of the manuscript prior to submission.

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